

contract prices when participating as subcontractors in a single prime contract proposal. Since the legislation requires that contracts be awarded to the lowest responsible bidder (without regard to the State's costs to administer the contracts, e.g., resolution of disputes, execution of change orders, litigation costs, delays in project completion and occupancy costs), the normally expected result will be multi-prime contracts.

In our opinion, under the limiting parameters of existing legislation, which require award of capital project contracts solely on the basis of the lowest price (without regard to other factors that affect total project costs), the State will continue to use the multi-prime method of contracts. This legislation is important because the legislation requires vendors to be selected on the basis of the lowest cost. In the case of prime contractors, they typically are priced higher than a combination of multi-prime contractors because prime contractors absorb the administrative burden of managing the entire project. Under the current legislation, the State is unable to accurately compare multi-prime contractors with prime contractors because the administrative cost to oversee the entire project is not factored into the analysis.

**Recommendations - We recommend that the State thoroughly pursue collecting more detailed information on contracting capital projects.** We further recommend that the State develop specific strategies to deal with the necessary legislation changes needed to convert to prime vendor contracting.

For the State to achieve the reported benefits of the use of prime contractors within the framework of existing legislation, and as practiced by all other states except one, and the private sector, we recommend the following:

- **Expand the information being obtained on capital projects** to include definitive and quantifiable information on the advantages and disadvantages of the use of multi-prime and single prime contracts. The information reported by State agencies could be expanded to include this additional information that should be collected by the State Construction Office. Currently, the data being gathered is principally a summary of the different types of contracts (multi-prime and single prime) being solicited and awarded. State agencies have provided general information on their experiences under the different forms of contracts; however, data is not requested from State agencies in a manner that would show the definitive and quantifiable impact in terms of State administrative costs, litigation costs, change orders, project completion, and occupancy costs resulting from one contract method versus the other.

As a test, the State could collect the quantifiable costs listed above on a sample of multi-prime contracts and their costs under a prime vendor scenario.

- **Develop specific strategies** to identify the necessary steps, including possible legislative changes, that are needed to realize the reported benefits to the State

from changing from the use of multi-prime to single prime contractors for capital projects. In our opinion, in the absence of a plan of action to implement the recommendation of the 1985 Governor's Efficiency Study Commission, and within the constraints of existing legislation, the State will continue to follow its past practice of primarily using the multi-prime method of contracting, at least until the end of the evaluation period of 1995.

- **Once studied and determined to be financially beneficial, set a goal** of using prime contractors as the primary method of contracting. This goal should be established with the overall objective of reducing the additional cost and administrative burden of contracting with multi-prime contractors.

***Finding 5 - The State should improve the procedures for procurement of architectural and engineering (A/E) services.***

Under State statutes, the Department of Administration has overall responsibility for supervision of contracting for design, construction and renovation of State buildings. The statutes also establish a State Building Commission within the Department of Administration to develop procedures for development and management of State capital facilities. The State Construction Office provides staff assistance to the State Building Commission.

Since the beginning of fiscal year 1991, the State Construction Office has issued about \$15 million in contracts for design and oversight of construction of State capital improvement projects. These design contracts range from approximately 5 to 22 percent of the total estimated construction costs for a project and average about 7.7 percent.

In North Carolina, the designer has a major role in all aspects of a capital project, from initial schematic concept to issuance of final as-built drawings. The State Building Commission has developed rules and regulations for the selection of designers (A/E firms) for planning, architectural, and engineering services associated with capital improvement projects.

The selection of a designer for a capital improvement project is based on the following process:

- All firms desiring to provide designer services to the State submit a statement of qualifications
- Firms wishing to compete for a specific project submit a letter of intent
- A screening committee for the project evaluates the firms, using established selection criteria, and ranks, in order, three firms

- The top ranked firm submits a fee proposal and the State Construction Office, in coordination with other State agencies, attempts to negotiate a fair and equitable fee. If agreement on fee cannot be reached with the top ranked firm, negotiations are undertaken with the next ranked firm, and will continue until an agreement is reached.

The State procedures state that normally the fee negotiation will involve mutual agreement in unit costs for time, materials, and overhead, and that a final lump sum price for each discrete project will be negotiated in advance.

We compared the process for contracting with designers, including the range of services provided, with the practices set forth in the federal procurement regulations. The procurement guidelines for federal projects provide that the cost for the production and delivery of designs, plans, drawings, and specifications cannot exceed 6 percent of the estimated cost of the project.

Our review identified the following practices, that, in our opinion, need improvement:

- State estimate of design costs
- Details on the basis of the designer's fee
- Designer responsibility for issuance of change orders
- Designer inspection during the project construction phase

These practices are discussed in detail below.

#### **State estimate of design costs**

The initial step in proposing a capital improvement project is the preparation of an overall capital project estimate by the State Construction Office. This estimate provides the basis for the capital budget for the project, which includes the design fee. Our review of the basis of the design fee indicated that it is a general estimate, based on the professional judgment of the State Construction Office staff. This design fee estimate is available to the prospective design firms and is used as a basis for evaluating the firms' proposed design fees.

Federal procurement guidelines provide that an independent estimate of the costs of A/E design services shall be prepared by the government before beginning contract negotiations. The estimate is to be prepared on the basis of a detailed analysis of the required work in the same manner as if the government were submitting a proposal. The government proposal is to be used in arriving at a fair and reasonable price and is not to be disclosed. The federal regulations provide that the prospective design firm proposal is to be based on a detailed breakdown of the cost elements that make up the total price.

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In summary, there are significant differences between the practices of the State Construction Office and the federal government:

- The State estimate of design costs is not based on a detailed estimate
- The design firms are aware of the State's estimate of design costs that are used by the State in evaluating the designer's fee proposal

#### **Details on the basis of the designer's fee**

We were informed that many designers submit lump sum fee proposals to the State. Although a lump sum price is negotiated, this practice is contrary to the State's regulations, which provide that the fee is to be based on unit costs for time, material, and overhead.

In our opinion, in the absence of details on the composition of the lump sum fee, the State is at a disadvantage in negotiating any price adjustments for subsequent contract changes resulting from changes in scope of work. The State is unable to identify the designer's estimated cost for the specific element of the overall contract and, therefore, is not in a position to effectively evaluate the designer's proposed price adjustment for that element. This is especially important if the State has not prepared a detailed estimate of design costs.

#### **Designer responsibilities for issuance of change orders**

The designer has responsibility for the issuance of contract change orders during the construction phase of the project. However, we were informed that the State also oversees the issuance and approval of change orders. As a general rule, if change orders are required and extra costs are incurred because of design deficiencies, the designer may be responsible for additional costs.

In our opinion, the active involvement of the designer in the issuance of change orders, puts the designer in a position of apparent conflict of interest. It would be against the designer's best interest to acknowledge that change orders result from design deficiencies for which the designer could be considered responsible.

#### **Designer inspection during the project construction phase**

The State contract with the designer stipulates that during the construction phase of the project, the designer is to inspect the work to ensure compliance with plans and specifications. The inspections are to be not less than once per week while work is in progress, and as often as necessary to ensure compliance with plans and specifications.

In our opinion, this provision is too generalized to ensure that inspections are performed with sufficient frequency throughout the construction phase of the project. It would be preferable for the contract to require the designer to provide the State with a work plan to

conduct inspections. These inspections would enable the State to determine if the frequency of inspections during critical phases of the project are adequate to ensure that work is completed in accordance with plans and specifications.

**Recommendations** - The State should strengthen the controls over use of designers for construction of capital improvement projects. This can be accomplished in three ways:

- **The State Construction Office should develop independent detailed estimates of the expected design costs** for capital projects to provide a basis for (a) evaluating the reasonableness of fees proposed by selected design firms, and (b) negotiating changes in contract fees when there is a change in the scope of work. Instead of using very general estimates, the State could arrive at more precise estimates based on the complexity of the task and estimated hours to perform.
- **The State Construction Office should reevaluate the use of designers to issue construction change orders** when the change orders may result from design deficiencies. Since the designer may be responsible for the additional cost incurred from these deficiencies, the designer has an apparent conflict of interest if the designer is also involved in issuance of the change order. In this way, the State shifts the burden of cost overruns to the design firm and reduces costs.
- **The contract with designers should require the designer to provide a specific plan for inspection during the construction phase of a project.** The current contract provision is too generalized to ensure that adequate inspection is performed during all phases of project construction.

***Finding 6 - Purchase and Contracts Division staffing levels have remained constant although the work load has decreased.***

The Purchasing Section of the Purchase and Contracts Division is responsible for processing agency requisitions for goods and services above the agencies' delegated authority. During the past three years the number of buyers in the Purchasing Section has remained the same while the delegated buying authority of the agencies has increased from \$2,500 in 1989 to \$10,000 in 1991, resulting in a decrease of work load in that section.

Peat Marwick analyzed the number of requisitions processed from the first quarter of 1989 through the fourth quarter of 1991. The objective of the analysis was to determine the efficiency of the section, in terms of the average number of invoices processed per employee, and how that average compared with the efficiency of the section during the past three years. In addition, we considered whether any changes occurred in the term contract work load that would significantly affect trends in overall work load.

An initial count of the number of requests processed showed a significant downward trend. In the first quarter of 1989, 2,969 requests were processed compared to 1,567 in the fourth quarter of 1991. This downward trend occurred while the buying staff was reduced by only five positions, from 36 to 31. In our analysis, we noted a significant downward trend in the number of requisitions processed, per employee, over the three-year period studied. The work load of the Purchasing Section staff decreased from 82.5 requisitions processed per quarter per employee in the first quarter of 1989 to 50.5 requisitions processed per quarter per employee in the fourth quarter of 1991. Exhibit 3-2 shows the average number of purchase requests from 1989 to 1991. This work load analysis does not include printing performed by other State agencies.

In our opinion, a decrease in work load should have resulted in a decrease in staffing levels. Alternatively, if warranted, the Purchase and Contracts Division could have taken advantage of these extra staff resources and redirected them to other areas. For example, they could be used in other activities outlined in this report that need further attention, such as monitoring of agency purchasing activities or development of a management information system.

We also reviewed the number of term contracts processed in the three-year period from first quarter of 1989 to the fourth quarter of 1991 to determine if greater use of term contracts could have resulted in increased work load that would justify present staffing. In the first quarter of 1989 there were essentially the same number of term contracts as in the fourth quarter of 1991. Therefore, no significant work load increase occurred from a change in the number of term contracts.

**Recommendation: The Purchase and Contracts Division should reduce or redirect resources of 11 staff members** to reflect the decrease in work load. These staff reductions will substantially improve the efficiency of the division and bring staffing levels in line with the 1989 staffing levels. At an estimated cost of \$40,000 per employee per year, the reduction in staff would result in a savings of approximately \$440,000 to the State. Based on this estimate, the State could redirect or eliminate 11 positions.

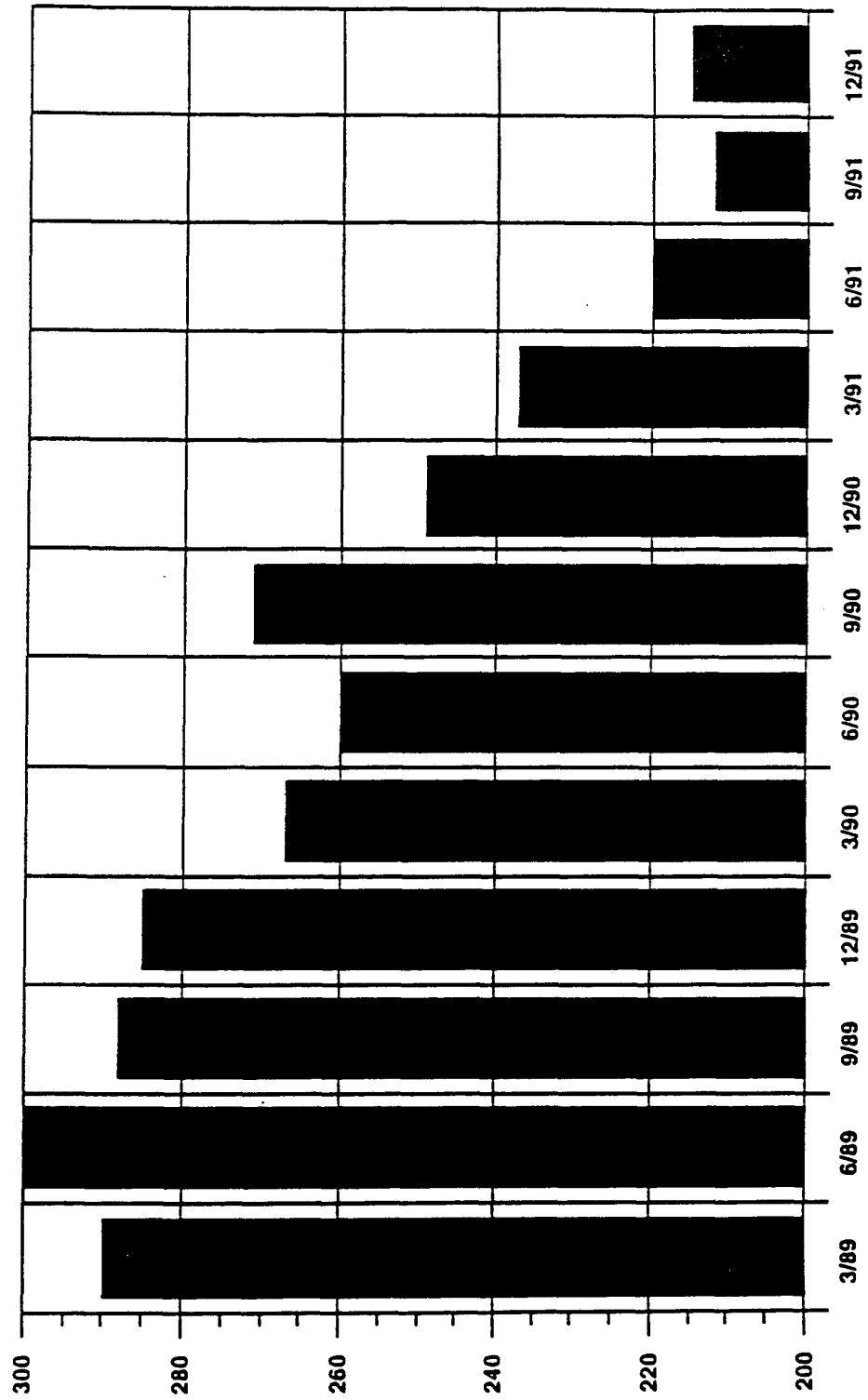
***Finding 7 - The State and federal surplus operations are duplicative and should be consolidated to reduce costs.***

Currently, there are two sections within the State that manage and distribute surplus property: State Surplus and Federal Surplus.

#### **State surplus**

The State Surplus Property Section is responsible for:

**EXHIBIT 3-2**  
**North Carolina State Government**  
**Purchase and Contracts Division**  
**Average Number of Purchase Requests Processed**



- Acquiring from the State agencies property considered to be surplus
- Warehousing and refurbishing surplus property to prepare it for resale
- Distributing surplus property to tax-supported or nonprofit medical institutions, hospitals, clinics, health centers, school systems, federally-sponsored radio and television stations, public libraries, civil defense organizations, and other recipients within the State that are eligible to receive surplus property
- Holding auctions for sale of available surplus property to private citizens

State agencies are provided first priority to purchase State surplus property, then the option to buy is given to nonprofit organizations, and finally State surplus property is made available for sale to the general public.

The State Surplus Property Section is located on 10.96 acres near downtown Raleigh and is housed in a warehouse of 42,000 square feet. Seven State employees are located at the State Surplus facility. Estimated fiscal year 1992 sales revenue is \$15 million.

### **Federal surplus**

The Federal Surplus Section disposes of federal government surplus property. The Federal Surplus Section serves essentially the same customers as the State Surplus Property Section, with the exception that the general public cannot purchase commodities from the Federal Surplus Property Section.

The Federal Surplus facility is also located near Raleigh, approximately 10 to 12 miles from the State Surplus location. The Federal Surplus facility is located on 20 acres with approximately 80,000 square feet of warehouse space. It is estimated that the Federal Surplus facility will generate approximately \$600,000 in revenue in 1992.

The State Surplus office and the Federal Surplus office have traditionally remained separate because it is believed that the two operations cannot be managed from the same location. These views are apparently based on the following factors:

- The Federal Surplus warehouse is restricted - private citizens do not have access; the State warehouse is unrestricted
- Larger facilities would be required to house both groups in one location
- Management information would have to be reported separately

We visited both locations and held in-depth discussions with the managers of both facilities. At the time of our visit, the State warehouse was being used at approximately 50 percent



capacity, while the Federal Surplus warehouse was being used at approximately 70 percent capacity.

Separate locations for the State and Federal Surplus property result in three primary adverse effects for the State:

- Potential users of surplus property must make trips to two locations. When State agency personnel shop for surplus property, the personnel must call or visit both locations to identify potentially useful commodities. As previously stated, the locations are 10 to 12 miles apart so visiting both is inconvenient to the State staff.
- Similar duties are performed at the two locations. In **both** locations, warehouse employees are required to handle and refurbish surplus goods.
- More property is being used for storing surplus property than is needed. In our opinion, based on the current level of activity, both operations could be performed at the Federal Surplus facility, thereby freeing the State Surplus site for sale.

Although concerns over the ability to operate Federal and State Surplus operations at the same location have been expressed, many states, including neighboring South Carolina, locate the federal surplus division and the state surplus division at the same location. With some additional administrative space required, the facilities could easily operate from the same office facility, but be formally separated to meet federal requirements. Additional warehouse space would be required. We would like to note that there is expressed concern that the federal site is not capable of housing the additional space. This concern would have to be resolved.

**Recommendation - We recommend that further analysis be performed in an effort to consolidate the State and federal surplus property functions.** If the State and Federal Surplus Property Sections' property units can be combined at the federal facility site, the results of this consolidation would be:

- **Enhanced service to customers** - Because all surplus goods would be located at one central facility, it would ease the burden of identifying and inspecting surplus commodities and essentially provide one-stop shopping.
- **A one-time income of approximately \$1.7 million** - This would be realized (based on the 1985 Governor's Efficiency Study) from the sale of the State surplus facility and associated land.
- **A yearly savings of \$60,000 in staffing** - Through consolidation, two warehouse positions and one receptionist position could be eliminated.

Further analysis would be required to accurately estimate the cost of any construction necessary to house both operations at one site. As previously stated, the State needs to perform additional construction analysis to determine if the additional space required at the federal facility can indeed be constructed.

***Finding 8 - The amount of time required to procure goods and services is too long.***

The General Assembly conducted a survey of State employees in December 1991. We reviewed a sampling of the employee surveys and observed a recurring comment concerning State purchasing practices--the amount of time it takes to process a purchase transaction is too long. Various interviews with purchasing agents at the departmental level supported this concern.

Currently, bids that are over the agency- or departmental-delegated authority of \$10,000 (generally \$25,000 for universities) require processing and approval by the Purchase and Contracts Division. The bid review process includes:

- Developing, advertising, and receiving the bids
- The Purchase and Contracts Division reviewing the bids, compiling a summary, and returning them to the agency or department requesting the bid
- The agency or department reviewing the summary of bids and selecting the low bid that meets the needs of the agency and forwarding it back to the Purchase and Contracts Division
- The Purchase and Contracts Division reviewing the recommendation and forwarding it to the Board of Award for final approval
- Return of the approved bid from the Board of Award to the Purchase and Contracts Division for notification of award to the vendor and to the agency or department

Using a sample of 25 bids processed by the Purchase and Contracts Division, we determined that it took an average of 21 days from the time the bids are opened until the contract is awarded. Exhibit 3-3 details the sample of 25 bids and the processing times involved.

Our study identified two steps in the current procurement process where the length of time required to process a procurement transaction could be reduced, without adversely impacting effectiveness.

- **Eliminate the practice of automatically returning all bids to the ordering agency or department for approval.** Currently, all bids received by the Purchase and Contracts Division are required to be returned to the ordering agency or department regardless of

# EXHIBIT 3-3

## Bid Process Time

Purchase and Contract Bid Process										B-C		D		C-D		A-D	
Agency	Vendor	Description	Bid Number	Date Bid Opened	Date sent to Agency	Date rec'd from Agency	Time Lag	Date Bid Awarded	Time Lag	Total Time Lag							
Wake County	Craft Industries, Inc.	Tire Service Body	105482	12/10/91	12/10/91	12/17/91	7	1/9/92	23	30							
DOT	Charleson Timber & Wood	Treated Timber	105875	12/30/91	12/30/91	1/3/92	4	1/9/92	6	10							
School of the Deaf	Phonics Ear, Inc.	Auditory Training Equip	104728	1/7/92	1/8/92	1/13/92	5	1/16/92	3	9							
Wake Tech College	Allen Precision Equip.	Electronic Dist. Meters	105480	1/7/92	1/8/92	1/13/92	5	1/18/92	3	9							
State Lab	Ortho-Diagnostics	Blood Bank Reagents	105015	12/18/91	12/19/91	1/15/92	27	1/23/92	8	36							
Dept of Correction	Snyder Paper Company	Mailing Tubes	200396	1/22/92	1/22/92	1/22/92	0	1/23/92	1	1							
DFA	DP Connections	Token Ring Adapters	200029	1/27/92	1/28/92	1/29/92	1	1/30/92	1	3							
BNA	Alan Fann & Associates	Shade Cloth	105510	1/17/92	1/18/92	1/22/92	14	1/30/92	8	23							
UNC-Hospital	Bobby Murray Chev.	Step Van	105991	1/22/92	1/23/92	2/3/92	11	2/6/92	3	15							
DFA	Moore Business Forms	Custom Continuous Form	106165	1/22/92	1/23/92	1/31/92	8	2/6/92	6	15							
DOT	The Wood Company	Survey Stakes	105213	12/18/91	12/19/91	12/30/91	11	2/13/92	45	57							
NCSU	Smith & Nephew	Endoscopic Equipment	104936	12/10/91	12/16/91	2/4/92	50	2/13/92	9	65							
Dept of Correction	Paul Beasley Concrete, Inc.	Ready Mix Concrete	106101	2/6/92	2/7/92	2/12/92	5	2/20/92	8	14							
ASU	Denton Vacuum	Vacuum Evaporator	106031	2/5/92	2/6/92	2/14/92	8	2/20/92	6	15							
Wildlife	Weldon, Williams, & Lick	Hunting/Fishing Stamps	200054	1/30/92	1/30/92	2/19/92	20	2/27/92	8	28							
Burke County	Commercial Refrig.	Walk-In Freezer	105574	1/22/92	1/23/92	2/5/92	13	2/27/92	22	36							
DOT	Trinity Industries, Inc.	Guard Rails	200615	2/26/92	2/27/92	3/4/92	6	3/5/92	1	6							
UNCG	Hewlett Packard	Gas Chromatograph	200111	3/2/92	3/2/92	3/2/92	0	3/5/92	3	3							
Dept of Labor	Vallen Safety Supply Co.	Gas Monitors	105227	1/14/92	1/22/92	3/5/92	43	3/12/92	7	50							
DMV	Uarco	Tile Forms	200532	2/20/92	2/20/92	3/2/92	11	3/12/92	10	21							
Dept of Agriculture	K & K Alcraft	Insecticide	201084	3/18/92	3/18/92	3/18/92	0	3/19/92	1	1							
Guilford County	Crescent Electric Supply	Lighting Fixtures	200461	3/11/92	3/12/92	3/18/92	6	3/19/92	1	0							
Dept of Correction	ATD - American	Blanket Lining	200727	3/11/92	3/12/92	3/18/92	7	3/26/92	7	15							
DOT	Cillford of Vermont	Traffic Sign Cable	200965	3/10/92	3/10/92	3/24/92	14	3/26/92	2	16							
Broughton Hospital	Thomas Built Buses	Activity Transit Bus	200868	3/16/92	3/16/92	3/25/92	9	4/2/92	8	17							
							285		200	513							
							Average Time Lag (in days)		11	21							